Technical Disclosure Commons

Defensive Publications Series

June 13, 2017

AUTOMATIC PLAYLIST CREATION FOR GROUP EVENTS

Matthew Sharifi

Jakob Foerster

AUTOMATIC PLAYLIST CREATION FOR GROUP EVENTS

Matthew Sharifi

Jakob Foerster

Content sharing platforms allow users to share media content (e.g., audio, video, images, text, etc.) with each other. Such media content may include audio clips, movie clips, TV clips, music videos, as well as user generated content such as video blogs, short original videos, pictures, photos, other multimedia content, etc. Users can create video playlists from the uploaded media content for displaying during group events. Such group events may include birthday parties, holiday parties, karaoke night, children playdates, etc. Conventionally, a user has to manually create and populate a video playlist with media content for each group event. However, manually creating a video playlist which appeals to each attendee of a group event is typically a time consuming process and it is usually difficult to account for the individual preferences of every attendee, particularly when the number of attendees is large.

We present a playlist creation engine for automating the creation of a playlist which intelligently incorporates the interests, tastes, and preferences of every attendee of a group event. The playlist creation engine allows users of the content sharing platform which are attending the group event to indicate a preference to include their personalized consumption profiles based upon their consumption of media content through the content sharing platform (e.g., video watch history, audio listening history, etc.). The playlist creation engine optimizes the viewing appeal of the playlist for all users which agreed to share their personalized consumption profiles while making it transparent to the users which aspects of the users' profiles are being shared.

In one implementation, when a user submits a request to generate a playlist for a group event, the playlist creation engine identifies what type of group event the playlist is being created

for. For example, a birthday party is a group event of the joyful, celebratory type. Lively media content such as birthday music and music videos may be associated with the birthday party group event. The playlist creation engine considers the categorization of the group event to determine which types of media content should be included in the playlist. The identification of categories associated with the group event may be included in the request, may be derived from the title of the event by mapping terms of the title with predefined categories, or may be machine learned with a neural network trained to predict a set of categories from the terms of the event title or event description. The playlist creation engine may further identify the users of the content sharing platform which are attending the event by considering event details from a calendar event invitation, event details linked from a social media platform, or attendees otherwise associated with or identified from the request to generate the playlist.

The users identified as attendees to the group event may be asked if they are willing to provide their personalized consumption profiles for the purpose of creating the playlist for the group event. The playlist creation engine may identify a number of content categories associated with the group event and provide the content categories to the attending users as the specific aspects of their personalized consumption profiles which will be considered in the playlist creation. The personalized consumption profiles of the consenting users may then be captured according to the content categories identified as associated with the group event and a list of media content items may be generated which optimizes for the attending user's preferences and tastes. The capturing of the personalized consumption profiles may be based off of user characteristics from the user's profile on the content sharing platform, the user's viewing history, or both the user's profile and viewing history. The playlist creation engine may create the personalized consumption profiles or receive them from a local or remote source (e.g., database,

server, etc.). The personalized consumption profiles may be generated directly from a user's content sharing or social media profile or may be machine learned with a neural network trained to predict a set of preferences for specific media content (e.g., videos, pictures, audio, text, etc.) or user preferences for categories of media content (e.g., rock, classical, upbeat, science fiction, drama, action, etc.). The personalized consumption profiles may include a list of media content preferred by the user or a vector of categories of media content with rankings or weights to indicate the user's preference for each category.

The playlist creation engine may create the playlist by identifying playlist entries from potential media content items satisfying the personalized consumption profiles for each user individually or all users as a whole and adding the identified playlist entries to the playlist. The playlist entries may be identified from the personalized consumption profiles by extracting identified content media items from a list of media content items in the personalized consumption profile or may be machine learned with a neural network trained to predict playlist entries using the vector of categories of media content with rankings or weights indicating the user's preference for each category. For example, a user's personalized consumption profile may include a list having four media content entries and an entry may be selected based on a selection criteria (e.g., overall popularity, number of times the user watched the media, etc.) or several users' personalized consumption profiles may be considered together and the entries selected based on a selection criteria that is applied to all of the profiles together. Playlist entries may be machine learned with a neural network trained to predict the media content which optimizes selection of entries based on the preferences of the attending users.

Figure 1 depicts a flow diagram of a method for creating a video playlist in response to a request from a user of a content sharing platform in accordance with some implementations.

First, at step 110, a request to create a playlist is received. For example, the request may be received at a server or client device hosting the playlist creation engine. The request may have originated from a user interface of a content sharing platform or a social media platform or derived from an event reflected by an application (e.g., a calendar entry created by a calendar application or an event invitation received or sent by an email application). In one implementation, the request may include one or more event characteristics such as an event identifier, an event description, an event type and/or an event title. Some or all of the event characteristics can be entered by a user initiating the request via the user interface using a user interface element such as a dropdown list or an editable text input field. Alternatively, some or all of the event characteristics can be derived automatically (e.g., using an application that has identified the event or by the playlist creation engine that has received event related data from the application).

Next, at step 120, a type of event is identified from the request. As described above, the type of the event may be specified by the user. Alternatively, the type of the event may be determined by performing a lookup of the event identifier in an event type database or by comparing key terms or phrases from the description or title to key terms or phrases associated with particular event types. In one implementation, a type of the event may be identified using a classification machine learning model trained with training data including event titles and/or descriptions as training input and event types as target outputs or by search queries of the content sharing platform and any resulting click-through to content media items (e.g., videos, songs, pictures, etc.) of the search query. Event types are associated with categories of media from which playlist entries may be selected. For example, a group event may be a birthday party and the event type may be associated with a first category of lively music and a second category of

family content. In another example, a group event may be a playdate event for viewing cartoons and this event type may be associated with a first category of cartoon series A, a second category of cartoon series B and a third category of cartoon series C. In one implementation, categories for an event type are predefined and stored in a data store. Alternatively, categories for an event type may be identified using a classification machine learning model trained with training data including characteristics of event types as training input and categories as target outputs.

In another implementation, categories can be determined based on the title and/or description of the event without determining the event type. For example, categories may be determined by performing a lookup of the event identifier in an event type database, by comparing key terms or phrases from the description or title to key terms or phrases associated with particular categories, by using a classification machine learning model trained with training data including event titles and/or descriptions as training input and categories as target outputs, or by search queries of the content sharing platform and any resulting click-through to content media items (e.g., videos, songs, pictures, etc.) of the search query.

Next, at step 130, users attending the event may be identified. Users who are attending the event may be identified by considering event details from a calendar event invitation, event details linked from a social media platform, or attendees otherwise associated with or identified from the request to generate the playlist. For example, the user interface may allow a user to link the request to a specific event for which other users have received invitations and recorded responses to the request indicating whether or not they will attend the event. The attending users may be provided with the request or associated with an event identifier or title, thereby allowing the playlist creation engine to identify the attending users using the event identifier or title.

Next, at step 140, a viewing profile for each user is received. Attending users may be prompted to provide permission to generate a viewing profile, where a viewing profile is a personalized content profile for video content items, based upon the categories of media from which playlist entries may be selected. In one implementation, attending users may have previously authorized all or specific categories for which their viewing profile may be generated or identified a preference to accept any viewing profile requests for an event which they are attending. A viewing profile authorization request may provide the attending user with the categories of media from which the playlist entries may be selected to inform the attending user of what aspects of their profile may be accessed and shared. The viewing profile may be generated by a remote server or may be generated locally. Viewing profiles may identify one or more video content items which the attending user has an interest in or may identify an interest value for each of the categories of media from which the playlist entries may be selected. The viewing profiles may also include interest values for subcategories of media from which the playlist may be selected. For example, a category of lively music may have sub categories of rock, classical, upbeat, etc. which may further refine the types of interests a user may have under the category. Viewing profiles may be generated by identifying music interests from a user's profile on the content sharing platform or based from a user's search or viewing history. A profiling machine learning model trained with search queries of the content sharing platform and any resulting click-through to content media items (e.g., videos, songs, pictures, etc.) of the search query or trained with the videos viewed in the search history may determine a user's viewing profile. For example, a set of watched videos corresponding to each category from which the playlist may be created may be extracted from the user's viewing history. Viewing profiles for each authorized user may be generated once all attending users have responded to the

authorization request or after a certain amount of time has elapsed from the sending of the authorization requests.

Next, at step 150, playlist entries for the playlist may be determined from the viewing profiles of each user. As mentioned above, each attending user who provides authorization for their viewing profile to be used in the creation of the playlist can have their viewing profiles generated. The viewing profile may identify specific video content which falls into each category and that the user has watched. A video content item may be identified as a potential playlist entry based on the frequency in which a user watched the video or identified based off a group of users watching the same video within a category. A playlist entry machine learning model trained with videos and their corresponding categories may determine playlist entries based on categorical preferences of each viewing profile or the collection of categorical preferences for a group of viewing profiles. For example, the playlist entry machine learning model may receive a viewing profile which indicated a high interest in rock music and determine that a popular rock song within the categories from which the playlist may be created is a potential playlist entry.

Next, at step 160, the playlist is created from the determined playlist entries. Each of the potential playlist entries identified may be shuffled together or selected in an alternating manner by each potential playlist entry from attending users until a playlist is fully populated. The request to create a playlist may specify a duration of the playlist and the playlist may be considered fully populated when the runtime of the playlist satisfies the specified duration. The completed playlist may provide a list of videos that is optimized for each of the authorized attending user's viewing interests, tastes, and preferences.

The implementation described herein may be adapted to any content sharing platform or social media platform as well as adapted to support any type of content media. For example, a photo slideshow may be created for a wedding which combines photos of the bride or groom from each of the attending users or a video playlist may be created showing a series of cartoon clips for a children playdate.

The playlist creation engine described herein allows for the automatic creation of a playlist which appeals to the interests, tastes, and preferences of each attendee of a group event which optimizes the playlist's appeal to the audience of guests regardless of the size of the group of users attending the event. Because the playlist creation engine creates a playlist relevant to all authorized attendees of the group regardless of size and without the substantial time commitment required in manually creating the playlist, users are more likely to create profiles for the content sharing platform or social media platform implementing the engine and view content items on the platform.

ABSTRACT

A playlist creation engine for automating the creation of a playlist which intelligently incorporates the interests, tastes, and preferences of every attendee of a group event which has indicated a preference to include their personalized consumption profiles based upon their consumption of media content through the content sharing platform is described. The playlist creation engine identifies a type of event and a group of users attending an event to provide the attending users with a request to build each user's personalized consumption profile for use in generating a requested playlist. Playlist entries are determined from the personalized consumption profiles and combined into the playlist. The creation of the playlist optimizes the viewing appeal of the playlist for all users which agreed to share their personalized consumption profiles while making it transparent to the users which aspects of the users' profiles are being shared.

Keywords: video, create, playlist, event, profile, attendee, classify, machine learning

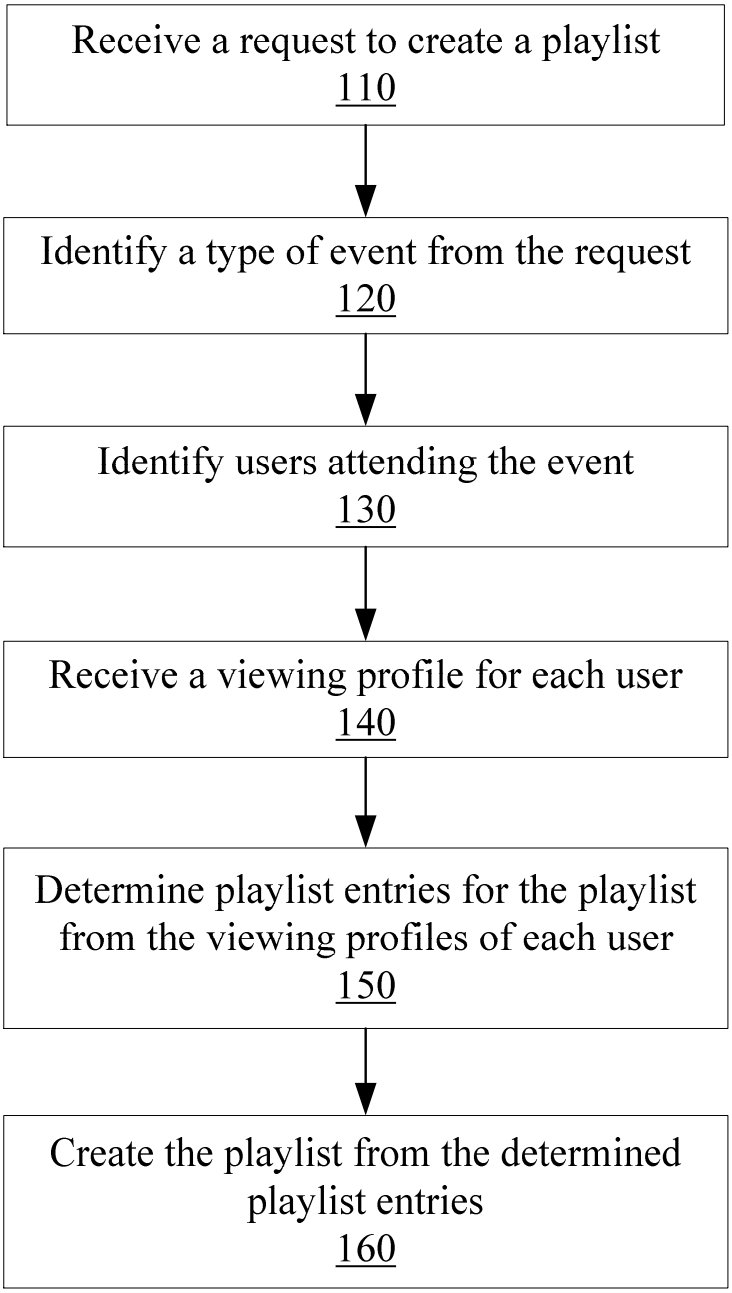
Receive a request to create a playlist
110
Identify a type of event from the request
120
Identify users attending the event
130
Receive a viewing profile for each user
140
Determine playlist entries for the playlist from the viewing profiles of each user
150
Create the playlist from the determined playlist entries
160

Figure 1